

FOUNDATION
HIGH NOBLE WHITE CERAMIC ALLOY

Foundation is a high noble alloy for porcelain fused to metal restorations. Its exceptional mechanical properties, high melting temperature for ease of soldering, and optimal thermal expansion make Foundation an outstanding alloy for long span bridges when high nobility is desired. Foundation is compatible with Creation™, Ceramco II¹ and other similar porcelains.

PROPERTIES*

Melting Range..... 2150° to 2335°F
Coefficient of Thermal Expansion
 from 25°C to 500°C:14.1x10⁻⁶C⁻¹
 from 25°C to 600°C:14.4x10⁻⁶C⁻¹
Density..... 13.9 g/cm³
Grain Size 25 microns

CHEMISTRY

Gold..... 51.9%
Palladium 34.0%
Indium 6.0%
Silver..... 5.0%
Zinc..... 3.0%

	<u>As Cast</u>	<u>Porcelain Fired</u>
Hardness.....	220 HV	225 HV
Tensile Elongation.....	25%	30%
Yield Strength, 0.2% Offset.....	66,720 PSI	70,050 PSI
Ultimate Tensile Strength.....	105,250 PSI	100,660 PSI
Modulus of Elasticity.....	12.2x10 ⁶ PSI	12.2x10 ⁶ PSI

Contains less than 1% Rhenium

Classification-High Noble
Au & Pt Group - 85.9%

PROCESSING TECHNIQUE

WAXING AND SPRUING

Wax to a minimum thickness of .3mm for single units and .5mm for bridge work. Avoid sharp angles and corners. The indirect sprue method is recommended for multi-units. Use at least an 8 gauge runner bar with 10 gauge connectors. The direct method may be used on single units and small bridges. Use no smaller than 10 gauge sprues with reservoirs 1/8" from the patterns. Patterns should be a maximum of 1/4" from top of investment.

INVESTMENT

A high heat phosphate investment with or without carbon is recommended.

BURNOUT

The recommended burnout temperature is 1450°F. A two stage burnout is recommended with most investments - check your investment instructions for details.

MELTING AND CASTING

One extra wind of the casting arm is recommended. Use a multi-orifice torch with 10 PSI fuel and 20 PSI oxygen. The alloy will fully puddle and form a ball before it is ready to cast. **DO NOT OVERHEAT. DO NOT USE CASTING FLUX.** The casting temperature is 2430°F.

DEVESTING AND FINISHING

Blast with aluminum oxide to remove investment particles. Finish with carbides or aluminum oxide stones. Reblast porcelain receiving surface with non-recycled aluminum oxide. Clean in ultrasonic for 10 minutes in distilled water or denatured alcohol (high purity only).

CONDITIONING

Oxidize from 800°F to 1800°F under vacuum with no hold time. The oxide should have a neutral grey color. Please note: degassing in air can form a green oxide. If this occurs, sand blast the metal, ultrasonic clean and re-oxidize under vacuum.

SOLDERS AND FLUX

Pre-Solder: PWS
Post-Solder: 1400 Solder
Flux: Brown Fluoride Flux for both pre and post soldering.

¹ Not a trademark of Jensen Industries.

* Test methods conform to ISO Standard 9693 and ANSI/ADA Standard 38

